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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,580	01/30/2004	William P. Goodwin	491442011700	8585
42178 7590 08/24/2007 EMULEX DESIGN & MANUFACTURING CORPORATION C/O MORRISON & FOERSTER LLP 555 WEST FIFTH STREET, SUITE 3500 LOS ANGELES, CA 90013			EXAMINER MOORE, IAN N	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 08/24/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/769,580	Applicant(s) GOODWIN, WILLIAM P.	
	Examiner Ian N. Moore	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1-30-04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. **Figure 1** should be designated by a legend such as --Prior Art--, instead of “**not invention**”, because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 4 and 6 are objected to because of the following informalities:

Claim 4 recites an acronym “**RRDY**” and “**SOF**” in line 1. For clarity, it is suggested to fully describe an acronym when reciting for the first time in the claim.

Art Unit: 2616

Claim 6 recites "a particular switch" in line 4. For consistency and clarification with "a particular switch" recited in claim 1, line 3, it is suggested to change "a particular switch" in line 4, to "**the** particular switch".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites, "**a1) detecting** that, with respect to a particular switch, there is a pending open on at least one particular one of the strings and a connection on at least another of the strings; and **a2) detecting at least one port not detected in a1**" in line 4-7.

It is unclear which/what port, that is not being detected in step 1, is detected in step a2 since there is no port detecting in step a1 (i.e. only strings are detected in step a1).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2616

6. Claims 1,2, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Foster (US 20020159446A1).

Regarding Claim 1, Foster discloses in a switched arbitrated loop system with multiple trunks (see FIG. 7, Interconnect Fabric Module (IFM) switches 01-04 are in the ring/loop system with trunks/connections; also see FIG. 16, IFM switches 1601 and 1602 with trunks/connections; see page 7, paragraph 48; see page 9, paragraph 61), configured for communication using the Fibre Channel protocol (see page 2, paragraph 27; IFM switches utilizing ANSI Fibre Channel Standard/protocol (i.e. FC-PH, FC-FS)) , a method to address lockup conditions (see FIG. 16-17, a system processing the method to avoid deadlock), comprising:

a) with respect to a particular switch in the system (see FIG. 16, IFM 1601/1602), detecting a particular combination of a plurality of pending open conditions (see FIG. 16, upon determining/detecting a specific/particular group/combination of “can’t forward start connect” condition between Nodes 1605-1607, note the unconnected links/trunks are open/pending) on the multiple trunks indicating a lockup condition (see FIG. 16, on the links/trunks with ports 1 and 0 at IFM 1601 and 1602 that are in deadlock condition; see page 9-10,61-64; see FIG. 17, Step 1701-1703); and

b) based on the detection (see FIG. 16-17, upon detecting the deadlock condition; see page 10, paragraph 62-64), closing at least one of the plurality of pending open conditions (see FIG. 17, S1706, removing/closing the partial/pending connection), thereby alleviating the lockup condition (see FIG. 16-17, avoiding the deadlock condition); see page 10, paragraph 62-64.

Regarding Claim 2, Foster discloses step a) further includes detecting, for particular ones of the multiple trunks on which there is a connection (see FIG. 16, detecting links/trunks at

Art Unit: 2616

ports 0-1 with a partial connection at IFM 1601, and links/trunks at ports 0-2 with a partial connection at IFM 1602), a lack of data communication on those trunks (see FIG. 16, there is no end-to-end communication (i.e. lack of data communication) on those partial links/trunks since end-to-end communications have not been established); see page 10, paragraph 62-64.

Regarding Claim 5, Foster discloses with respect to the particular switch (see FIG. 16, IFM 1601/1602), the trunks are configured into groups of multiple trunks (see FIG. 16, links/trunks are provisioned/configured into groups of links/trunks- in IFM node 1601, first group of links/trunks are to/from Node 1605 and second group of links/trunks are to/from IFM 1602; in IFM node 1602, first group of links/trunks are links/trunks to and from Node 1606/1607, and second group of links/trunks are links/trunks to and from IFM 1601; see page 9-10, paragraph 61-62); and

the particular condition includes, for each of the groups of multiple trunks, (see FIG. 16, “can’t forward start connect” condition between Nodes 1605-1607, (note the unconnected links/trunks are open/pending), for first/second group of links/trunks at IFM 1601/1602) at least one of the trunks being characterized by a pending open condition (see FIG. 16, the trunk/link between IFM 1601 and Node 1605 is pending/open conditions; the trunk/link between IFM 1602 and Node 1606/1607 is pending/open condition) and at least one other of the trunks being characterized by a lack of data communication thereon (see FIG. 16, the trunk/link between IFM 1601 and 1602, which is partially connected, but there is no end-to-end data communication (i.e. a lack of data communication); see page 10, paragraph 62-64.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foster in view of Vahalia (US 20050251500A1).

Regarding Claim 3, Foster discloses detecting lack of communication a data communication (see FIG. 4, see FIG. 16, there is no end-to-end Fibre channel communication which carries data; see page 10, paragraph 62-64) on a particular trunk (see FIG. 16, on the link associated with port 0/1/2 n those partial links/trunks since they have not been established) includes detecting that a particular type of signal on that particular trunk (see FIG. 4, Start of Frame (SOF), which indicates the start of connection to establish physical connection); see page 6, paragraph 45; see page 10, paragraph 62),

Foster does not explicitly disclose detecting type of signal has not been detected for a predetermined period of time.

However, it is well known and established in the art that the common concept of having no signal/data is being transmitted on the link to established the connection since there is a lack of data communication or lack of activity (i.e. inactivity) for a predetermined period of time. In particular, Vahalia teaches detecting a lack of data communication on a particular trunk (see FIG. 4, 15, detecting inactivity on a link/trunk between data mover and the client) includes detecting

Art Unit: 2616

that a particular type of signal has not been detected on that particular trunk for a predetermined period of time (see FIG. 4, detecting that data/metadata/control information has not been detected (i.e. inactivity on the link/trunk where is no data/metadata/control information is being transmitted) for a predetermined amount of time); see page 5, paragraph 57; page 12, paragraph 119-122).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to lack of communication includes detecting type of signal has not been detected for a predetermined period of time, as taught by Vahalia in the system of Foster, so that it would enable to detect channel failure and update respective of the channel, and explicitly closing of the channel; see Vahalia see page 12, paragraph 119-122.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foster and Vahalia as applied to claim 3 above, and further in view of Coffey (US007110414B2).

Regarding Claim 4, Foster discloses the particular type of signal includes SOF (see FIG. 4, Start of Frame (SOF), which indicates the start of connection to establish physical connection); see page 6, paragraph 45; see page 10, paragraph 62).

Neither Foster nor Vahalia explicitly discloses RRDY.

However, having transmitting Receiver Ready (RRDY) upon receiving Open (OPN) before data transmission is so well known and established in the Fiber Channel (FC) Standards. In particular, Coffery discloses RRDY (see col. 6, line 4-60; RRDY indicates that an interface is ready to receive data frames).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide primitive signal RRDY, as taught by Coffey, in the combined system of Foster and Vahalia, so that it would indicate event and action occurring in the network; see Coffery col. 6, line 46-60, and also by using the FC standardized primitive signal, it would provide interoperability with other FC devices in the network.

Allowable Subject Matter

10. Claim 6 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 6 is allowable over the prior art of record since the cited reference taken individually or in combination fails to particularly disclose or render obvious the following italic limitations:

In claim 6, ... a2) detecting at least one port not detected in a1) having a destination that is a connection on at least one string detected in a1), wherein the pending open on the port detected in a2) has a close counter at maximum value... in combination with other limitations recited as specified in Claim 6.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Art Unit: 2616

- **Black (US 20030174722A1)** discloses a fiber channel apparatus resolving deadlock issues in page 19-20.
- **Filgate (US006292488B1)** discloses an apparatus for resolving deadlock in distributed network.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Ian N. Moore
Examiner
Art Unit 2616